

Abstract—Gyrochronology estimates the age of a low-mass star from its rotational period, which is found from changes in brightness caused by dark star spots. First revealed as an insight in (Skumanich, A. 1972, *The Astrophysical Journal*. 171: 565) it allows astronomers to find true sun-like stars that may harbor life in its planets. Here a simple expression for the age of a star is derived through a novel linger thermo theory (LTT) that combines thermodynamics with its discovered time-dual, named lingerdynamics. This expression relates the star age to the ratio of past and present rotational period metrics (RPM) of lingerdynamics. LTT has been used earlier to derive a simple expression for the finding of the entropy of spherical-homogeneous mediums as well as offering a thermote, a novel thermal element, as a new sensible candidate for both dark-matter and dark-energy (Feria, E. H. Nov. 19, 2016, *Linger Thermo Theory, IEEE Int'l Conf. on Smart Cloud*, 18 pages, DOI 10.1109/SmartCloud.2016.57, Columbia Univ., N.Y., N.Y. and Feria, E. H. June 7th 2017, *AAS 340th Meeting*). In LTT the lifespan of system operation τ is given by: $\tau = (2GI/3v^3)M^2 \times \text{RPM}$ where G is the gravitational constant, I is the pace of mass-energy retention in s/m^3 units (e.g., for our current sun it is given by 5 billion 'future' years over its mass), and v is the perpetual radial speed about the point-mass M . Since in LTT a star is modeled as a point mass at the center of its spherical volume, its RPM is not the same as the measured rotational period of an actual star. For instance, for our sun its equator rotational period is approximately 25.34 days, while in lingerdynamics it is a fraction of a day, i.e., 0.116 days, where this value is derived from the RPM expression $2\pi r_{sun}/(GM_{sun}/r_{sun})^{1/2}$ where $2\pi r_{sun}$ is the circumference of the sun, $(GM_{sun}/r_{sun})^{1/2}$ is the perpetual radial speed v for our point-mass modeled sun, and r_{sun} and M_{sun} are the sun radius and point-mass, respectively. However, using conservation of angular momentum arguments it is assumed that the ratio of the 'actual past and present rotational periods' matches that of our theoretical lingerdynamic's rotational period metrics. Using this key enabling theoretical assumption one then sensibly arrives at gyrochronology from the simplifying LTT perspective.